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NESTING RECORDS OF NORTHERN CARDINALS COLLECTED BY AMELIA LASKEY AT NASHVILLE FROM 1931 TO 1962

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ABSTRACT

Nest records (n = 249) of Northern Cardinals (*Cardinalis cardinalis*) collected at Nashville, Tennessee, beginning in 1931 and ending in 1962 are analyzed. This data set is unique because of its large size and the record of laying dates of first eggs for many years. Median date of first egg of year was 6 April (n = 29 years). Extreme dates of first egg were 23 March and 22 April. First-egg dates were significantly and positively correlated with high mean air-temperatures for February and for March. Latest clutches reported were laid in early August. Three-egg clutches made up 71% of all 117 nests with sufficient data on clutch size; the modal clutch-size in all months was three. Clutches of four were rare (8%) and occurred only before May. Two-egg clutches (21%) occurred in all months, but particularly after May. Average clutch-size was 2.9 before June and 2.5 afterwards. Average brood-size was 2.3. From March to May, modal brood-size was three; thereafter broods of two predominated. About 45% of nests were successful. Ten percent of nests were parasitized by Brown-headed Cowbirds (*Molothrus ater*).

INTRODUCTION

Most studies of nesting song-birds are short-term and thus provide little information on annual variation in nesting variables. On the other hand, rich sources of demographic data have been provided by long-term studies carried out for 40 to 50 years (e.g., von Haartman 1990 on Pied Flycatchers (*Ficedula hypoleuca*) in Finland, and Lack 1966 and Perrins and McCleary 1989 on Great Tits (*Parus major*) in England). These and similar studies are valuable in relating long-term breeding trends to environmental temperatures, a topic of considerable interest in connection with global warming (Ford 1982).

The long-term studies of Amelia Laskey at Nashville, Tennessee, are less well-known. She studied several species for periods of 25 to 40 years (Goodpasture 1975). Laskey, however, was primarily interested in behavior and usually did not distinguish between events of different years. For example, in 1944 she described nesting behavior of the Northern Cardinal (*Cardinalis cardinalis*) at Nashville, Tennessee, based on records accumulated since 1931, but provided little data on annual and seasonal variation in nesting variables. By 1962, I had spent several years studying cardinals at London, Ontario (Scott and Lemon, unpub.). I inquired of Laskey if she had cardinal nesting records, additional to those reported by her in 1944. She replied affirmatively and transcribed her records to 239 nest record cards, which she sent to me. We intended to publish a comparison of cardinal nesting in Tennessee and Ontario. This goal was not realized because of my procrastination. Laskey's data are extensive; they provide a 29-year record of cardinal nesting at Nashville and should be published.

My aim in this paper is three-fold. First, I consider the annual variation in the dates of first layings of the year. Second, I report seasonal variation in clutch and brood sizes at Nashville. These data will supplement those contained in earlier papers on Tennessee cardinals (Shaver and Roberts 1930; Ganier 1934, 1935, 1937, and 1941; Laskey 1944; Nicholson 1997). Finally, I compare some aspects of cardinal nesting in Tennessee and Ontario.

MATERIALS AND METHODS

Nest records (n = 239) were available from Laskey for 29 years beginning in 1931 and ending in 1962 (no records in 1932, 1958, and 1961). To augment the meager sample for June and July, I have used 10 nest records reported by Ganier (1934, 1935, and 1937). About 40% of the nests were found by Laskey in her extensive garden of about 0.5 ha at 1521 Graybar Lane in Nashville (Laskey 1936, 1962). The remainder were found by Laskey and friends in a large nearby area of southwest Nashville. Goodpasture (1975) described some of Laskey's activities in her garden, which she used as a banding station at all seasons, and where Laskey observed Northern Mockingbirds (*Mimus polyglottos*) and Northern Cardinals throughout the year. Thus, she was able to note the first nesting activities each year. Her first records of nesting each year were often of the first nesting attempts of the pairs in her garden. In each of 12 springs, two or three pairs began their first nests in March or April in Laskey's garden. Prelaying activities were often observed for several days before laying actually began. Therefore, it does not seem likely that these nests were replacements for ones built earlier elsewhere. Thus, Laskey's first records represent first nestings at Nashville in the years in question.

I divided the nest records into four sets. Set 1 nests (n = 37) were found before or during laying, and they were watched daily until there was no increase in clutch size. This set provided the most accurate information on clutch size, and on dates of initiation of clutches. It also provided information on the interval between the onset of nest building and laying. Set 2 nests (n = 80) contained eggs when found, usually in incubation, or had been found before laying or incubation had begun,

but were not watched regularly enough for inclusion in the first set. The date of clutch initiation for those nests in which eggs hatched could be estimated within a day or so, assuming an incubation period of 13 days. In some nests, only the date of discovery was known. In these, the date of clutch initiation occurred between two extreme dates. The clutch could have been initiated two days before a three-egg clutch was found. Alternatively it could have hatched later on the day of discovery. Thus, on average, the clutch was about eight days old. Set 3 nests (n = 100) contained nestlings when found. Apart from 17 nests followed to their conclusion, the nestlings in the remainder were banded when old enough and no further observations were made. The initiation of laying was estimated by assuming that the nestlings were six days old at banding. The remaining nests (Set 4, n = 32) had incomplete data and could not be used for analyses of clutch or brood size. Some of these nests provided data on dates of clutch initiation and nest success.

Sets 1 to 3 provided data on variation in clutch sizes and brood sizes. There may be bias in the latter estimate because some, but not all, nestlings in a brood might have died between banding and fledging. Brood parasitism by Brown-headed Cowbirds (*Molothrus ater*) probably reduced the clutch-size and brood-size because cowbirds often remove a host egg. This bias at most was small because parasitism was low.

One hundred and forty-three nests were begun before May, 47 in May, and only 58 through June, July, and August. Ganier (1941) and Laskey (pers. comm.) comment that summer droughts reduce nesting activity. But it seems unlikely that this could entirely account for the scarcity of late nests in this sample. It could also have resulted from reduced effort in seeking nests. Thus, the sample is not necessarily representative of the seasonal distribution of nests at Nashville. Nevertheless, it allows analysis of annual variation in the beginning of nesting, and seasonal variation in clutch size, in brood size, and in nesting success.

Most years were represented by fewer than 10 nest-records but more than 15 records were reported in several years. The latter allowed a reliable comparison between the onset of nesting between different years.

I used the Mayfield Method (Mayfield 1961, 1975) to estimate nest success. I totaled the number of days that nests were observed (nest-days or exposure-days) and the number of nests that failed during the observation period. The daily mortality rate (m) of a nest equals the number of nest failures divided by the number of exposure-days. The daily survival rate (1 - m) allows calculation of the probability that a nest will produce a fledgling, i.e. will be successful. For example, if the daily survival rate for a set of nests is 0.97 and the duration of the nest period from first egg to fledging is 24 days, then the probability of a nest being successful is $0.9724 = 0.48$. In other words, 48% of nests found on the day of egg 1 would be successful.

Temperatures for Nashville were extracted from World Weather Records (U.S. Weather Bureau) or from data for Tennessee obtained from the National Climatic Data Center, Asheville, North Carolina. Temperatures for London, Ontario were contained in Monthly Meteorological Summaries for London Airport, Meteorological Branch, Department of Transport, Canada.

RESULTS

Many first nests were begun in March, once as early as 3 March. The interval between Laskey's first observation of building or manipulating nest material and the record of the first egg in the subsequent nest was 10 days (maximum, 43 days) in 12 of 32 recorded cases.

In 29 years the first egg of the year was laid between 23 March (or possibly slightly before) and 16 April. The first egg was laid in March in at least eight of these years. The median date was 6 April.

High mean February and March temperatures were positively and significantly correlated with annual dates of first eggs (Spearman Rank Correlation Coefficient, February $r_s = 0.378$, one-tailed test, $P < 0.05$; March, $r_s = 0.560$, one-tailed test, $P < 0.01$). Two successive years, 1937 and 1938, represented late and early beginnings of laying. In 1937, 13 April was the date of the first egg in the first 10 nests found (13-29 April); the mean February and March temperatures in 1937 ranked 22nd and 23rd lowest of 29 means for each month. In contrast, in 1938 laying occurred in six nests in March, beginning by about 23 March, and seven April nests before 13 April. In the other 28 years, March layings were recorded only seven times, never more than once in a particular March. The median date of first layings in 1938 was about 20 days earlier than in 1937. So, the early spring of 1938 was clearly exceptional, when mean February and March temperatures ranked first (highest) and third respectively among the 29 means for those months. In 1938, February and March mean temperatures were 5.3°C and 6.3°C higher than respective values in 1937.

Three cardinal eggs was the most common clutch (Table 1) regardless of season. Thirty-two of 37 complete clutches found before incubation had three eggs; the mean was 3.0. Fifty-three of 80 clutches found during incubation each had three eggs; in the remaining 25 clutches the average clutch was 2.7. In both samples combined, clutches of four were scarce ($n = 9$) and were always initiated before May. Clutches of one and two comprised about 20% of all clutches, but there was no clear seasonal trend.

Cowbird parasitism was about 10%; 12 of 118 nests contained cowbird eggs or young. None had more than one cowbird egg.

Brood size was greatest ($\ddot{y} = 2.38$) and most variable in March/April (Table 2). Although clutch size averaged almost three at this time, a surprising number of broods ($n = 13$) consisted of a single nestling. The modal size was three for broods produced from clutches laid before June. Thereafter, the modal brood number was clearly two.

Extreme times of fledging occurred in 1937 and 1938. First fledging occurred on 6 May 1937, but 20 days earlier on 16 April 1938. Median dates of the first 10 broods fledged were 16 May and 22 April in 1937 and 1938, respectively.

There was little variation in nest survival per day, either among nesting stages or overall among seasonal periods (Table 3). Daily nest survival among nesting stages (not shown in Table 3) was 0.974 before incubation, 0.976 during incubation, 0.976 during nestling stages, and 0.830 for a small sample of nests of uncertain status.

Table 1. Number of nests of a given clutch-size of Northern Cardinals at Nashville, Tennessee, estimated from 37 nests found before incubation and 80 nests found during incubation, arranged by season.

	Number of nests found						
	Before incubation Clutch size			During incubation Clutch size			
Period	*2*	*3*	*4*	*1*	*2*	*3*	*4*
16-31 March	0	2	0	0	0	4	1
1-15 April	3[a]	12[a]	1	2[a]	7[b]	16[b]	2
16-30 April	0	10[b]	2[a]	0	1	13	3
May	0	4	0	0	2	10	0
June	0	1	0	2[a]	2	4[a]	0
July	0	2	0	0	6	5	0

[a] Nest parasitized by cowbird.
[b] Two nests parasitized.

Table 2. Number of nests of a given brood size of Northern Cardinals at banding or fledging at Nashville, Tennessee, arranged by month of clutch initiation.

Brood size	*1*	*2*	*3*	*4*	*Total*
March/April	13	33	42	3	91
May	5	12	16	0	33
June	1	11	4	0	16
July	1	11	7	0	19
Total	*20*	*67*	*69*	*3*	*159*

Table 3. Daily nest survival and probability (*P*) of nest success of Northern Cardinals at Nashville, Tennessee, assuming duration of 24 days from first egg to last fledging.

Time Period	Mortality/Day[a]	Survival/Day	*P* of Success
Before 16 April	22/787 = 0.028	0.972	0.506
16-30 April	17/468 = 0.036	0.964	0.415
May - August	20/645 = 0.031	0.969	0.470

[a] Mortality rate determined from number of nest failures divided by number of days of observation.

There was no marked seasonal variation in daily survival rates, which varied between 0.955 and 0.978 around a mean of 0.969. Assuming a nest period of 24 days from egg 1 to last fledging, the probability of a nest surviving for that period is $0.96924 = 0.469$. That is, almost 50% of nests would produce at least one fledgling.

DISCUSSION

Egg laying began in late March in eight of the 29 years recorded. These March records are earlier than most first laying dates reported by others in Tennessee (Shaver and Roberts 1930, Ganier 1941) and in neighboring states of North Carolina (Potter et al. 1980) and Kentucky (Shaver and Roberts 1930, Mengel 1965).

Any of several factors could account for the relatively high number of years with first layings in March observed by Laskey. One, March in many of the 29 years of Laskey's observations may have been abnormally warm, thus promoting March layings. Two, supplemental feeding provided in winter by Laskey (1944) could have advanced first laying dates, as it is known to do so for other species (Nager et al. 1997). Three, habitat differences are known to influence initial laying dates in several passerines (Snow 1958), laying beginning earlier in gardens than in woodlands. Perhaps a greater proportion of Laskey's early nestings occurred in gardens than nestings reported by other investigators elsewhere.

The interval between median dates of first layings at Nashville and London (Scott and Lemon, unpub.) was nine days. This difference is much less than would be predicted from Hopkin's Bioclimatic Law (Lincoln et al. 1982). The law states that the progression of spring is retarded by about four days for each increasing degree of latitude, for each five degrees of longitude eastward, and for each 100 m rise in elevation. As London is seven degrees north and 5.5 degrees east of Nashville and has about the same elevation, the difference between first layings should be about a month. Such a difference of a month marks the time of flowering of some trees in Tennessee and southern Ontario, e.g. Flowering Dogwood (*Cornus florida*) (Reader et al. 1974) and Tulip Tree (*Liriodendron tulipifera*) (Scott, pers. obs.). Thus, cardinal laying at London begins earlier relative to plant growth and at lower temperatures than at Nashville. The average daily mean temperatures on the median dates of first eggs were 13.9°C and 7.6°C at Nashville and London respectively. The difference between the means is highly significant (t-test, $df = 47$, $P < 0.001$).

Clutch size was usually three, as elsewhere in most of the cardinal's range (Crowell and Rothstein 1981), and notably no more in northern populations (e.g. Ontario, Peck and James 1987). Clutches of four eggs were uncommon in Tennessee and Ontario and typically occurred only about a month or so after laying began. Clutches of one were found only in incubated and/or parasitized nests. As some eggs may have disappeared from such nests, there is no good evidence that a single egg ever constitutes a clutch.

Nest success was inexplicably high in this sample, exceeding 40% at all seasons. Estimates from elsewhere were usually lower, particularly early in the nesting season (Woolfenden and Rohwer 1969, Filliater et al. 1994, and Scott and Lemon (unpub.) in Ontario).

Northern Cardinals have greatly expanded their range northwards in the last 200 years (Kirtland 1838, Beddall 1963). Annual expansion is often gradual (Sherman 1913, Young et al. 1941), but, sporadically, massive fall invasions pass well beyond the normal limit of range (Young et al. 1941, Snyder 1957, Mactavish 1996). These fall invasions must involve large numbers of cardinals dispersing from southern populations. This dispersal probably reflects an above average production of young in the preceding breeding season.

An increase in annual production could arise from an unusually long nesting season. Above normal spring temperatures would favor an abnormally early onset of laying, which in turn could result in pairs producing more successful broods than normal. Thus, it is worth noting the coincidence in 1938 of the exceptionally early nesting at Nashville and an extensive immigration of cardinals to southern Ontario in the fall of that year (Snyder 1957). Thus, I predict that there should be a strong positive correlation between notable fall invasions of peripheral areas and unusually warm early springs in the preceding breeding seasons.

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I dedicate this paper to the memory of Amelia Laskey, whose long-term interest in cardinals provided the basis for this study. The suggestions and comments of the reviewers, Charles P. Nicholson and David M. Pitts, are much appreciated. I am grateful to Melina Buragina, who typed the manuscript, and to my wife, Rosemary, who made valuable comments.

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YELLOW-BILLED LOON: FIRST RECORD IN TENNESSEE

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On 18-19 February 1995, I observed a Yellow-billed Loon (*Gavia adamsii*) on Dale Hollow Lake in Clay County, Tennessee. This record constituted the first for the state and, at the time, was among the southeasternmost sighting in North America. The appearance of Yellow-billed Loon in Tennessee is part of a "recent phenomenon" described by North (1994), involving both the species' use of man-made reservoirs as migrating and wintering habitat within the interior of North America and the increasing ability of field observers to identify basic-plumaged birds.

My observation took place in extreme northeastern Clay County at a boat ramp about 1 km south of the Lillydale Campground and Boat Ramp (c. 36° 36' N, 85° 18' W) on Dale Hollow Lake. Dale Hollow Lake is a long, fairly narrow, deep, clear impoundment that appears to be somewhat similar to typical winter habitat of Yellow-billed Loon, i.e., "near-shore marine waters in protected embayments and archipelagos" (North, 1994). This lake, however, is fresh rather than salt water.

The Yellow-billed Loon swam and dived in the lake within a kilometer of the boat ramp on both dates of observation during the following time periods: 1000-1030 CST 18 February and 0900-1230 CST 19 February. It was observed 19 February from a boat as close as 50 m by two other observers and myself. It was as close as 200 m to shore near the boat ramp on both dates, though most of the time it was 400-1000 m distant. Light conditions were good to excellent on the days of observation. Optical equipment included 10x Zeiss binoculars and a 40/64x Questar telescope.

The most obvious identifying characteristic of this bird was its persistent habit of holding its head tilted above the horizontal plane, much in the manner of Red-throated Loon (*Gavia stellata*), but completely unlike the typical head posture of Common Loon (*Gavia immer*). The bill of this bird also appeared to be slightly larger than bills of nearby Common Loons. It displayed an up-tilted aspect as a result of a slight gonydeal angle. It was white with a slight yellow wash when viewed at 50 m with 10x binoculars, and the upper mandible showed no dark ridge along the outer half. No distinguishing facial marks were evident, in particular, no dark spot on the ear coverts; such a spot is not always evident on this species (Kaufman, 1990).

The bird's overall size (as large as, or slightly larger than, Common Loons near it) also helped in its identification. In all light conditions under which the bird was seen, its dorsal coloration was different from that of nearby Common Loons, as it usually appeared brownish or tan instead of the grayish coloration characterizing the Common Loons. This bird seldom associated with Common Loons and never for a lengthy period of time; at one point it was observed preening alone for 10 minutes at a distance of about 200 m.

Other observers 18 February included J. Schaefer, J. and L. McKeon, and J. and N. Stephens. On 19 February, observers besides myself included B.H. Stedman, S. and R. Satterfield, and L. McFarland, all of whom were experienced field observers. On 19 February, McFarland provided a boat that enabled close observation of the loon and the taking of documentary photographs by him and S. Satterfield. On 21 February, several observers, including J.R. Wilson, obtained distant, precipitation-obscured views of a bird that was probably the Yellow-billed Loon, but none of them felt able to identify it with certainty.

Basic data about this sighting were published in two journals (Witt, 1995; Stedman, 1995), and a photograph of the loon by S. Satterfield was included in one (Stedman, 1995). In addition, documentation about the sighting was submitted to the Tennessee Bird Records Committee, which approved the record and placed this species on the official list of Tennessee birds (Knight, 1996).

States adjacent to Tennessee with records of Yellow-billed Loon include Arkansas (Jackson, 1992; H. and M. Parker, pers. comm.), Missouri (North, 1994), and North Carolina, where one record is currently under review (as of 8 February 2000) by the state bird records committee (R. Davis, pers. comm.). No acceptably documented sightings have occurred in Alabama (G. Jackson, pers. comm.), Georgia (R. Davis, pers. comm.), Kentucky (B. Palmer-Ball, pers. comm.), Mississippi (T. Schiefer, pers. comm.), or Virginia (M. Iliff, pers. comm.).

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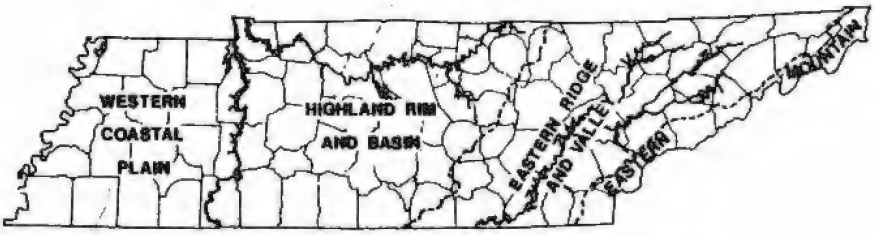
THE SEASON

RICHARD L. KNIGHT, Editor



WINTER: 1 DECEMBER 1998 - 28 FEBRUARY 1999

The state experienced a rather mild winter. Precipitation was moderate throughout and almost entirely of the liquid form. These conditions were generally favorable for a wide variety of wintering and visiting birds. The mildness allowed a whole host of lingering birds to remain north of their usual winter range. Among these were American Bittern and Great Egret in two regions apiece, Cattle Egret, Osprey, three species of rails, several unexpected shorebirds (including some early spring migrants), Common Nighthawks in two regions, White-eyed Vireo, Barn Swallow, Marsh Wren and Gray Catbird in two regions each, Blue-gray Gnatcatcher, six species of warblers (most notably two separate Prairie Warblers and a pair of American Redstarts), and Baltimore Oriole in two regions.

Waterfowl populations appeared healthy. Several scarce species occurred: Ross's Goose in two regions, Tundra Swan in three regions, and various scoters in all four regions. Other notable waterbirds included Western Grebe and Glaucous Gull in middle Tennessee, Red-necked Grebe in the Ridge and Valley, Eared Grebes in all regions, and Franklin's Gull in two regions.

Three species of western hummingbirds were documented wintering in Tennessee, including a return by the previously state-first Calliope to Nashville. Boreal irruptive species did not invade this winter. Most regular wintering birds seemed to be in near-normal numbers.

Standard Abbreviations

ad - adult	L - Lake
CBC - Christmas Bird Count	m- male
Co - County	max - maximum count
ers - earliest reported sighting	m.ob. - many observers
et al. - and others	n, e, s, w - compass directions
f - female	NWR - National Wildlife Refuge
fide - reported by	sp.- species
im - immature	S.P. - State Park

WMA - Wildlife Management Area

WESTERN COASTAL PLAIN REGION — Mild temperatures and below average precipitation provided favorable conditions for wintering birds as well as for

the observers. Thanks to local birders throughout the region, observations were recorded in many counties. Twenty-two species of waterfowl were recorded by either aerial or ground surveys in West Tennessee counties (WGC, TWRA). Sightings in both the northwest and southwest corners of the region reflect a wide distribution of waterfowl and passerines. A King Rail, Franklin's Gull and American Avocet provided first winter reports for West Tennessee. Seven active Bald Eagle nests were reported at Reelfoot Lake. For information not included in this report, please contact the regional compiler.

Loon - Merganser: **Common Loon:** 5-16 Dec (1-2) Reelfoot L.; 26 Jan (1) Everett L. (WGC). **Horned Grebe:** 1 Dec - 27 Feb (21) Reelfoot L. (WGC). **Eared Grebe:** 26 Dec (1) Spillway, Reelfoot L. (WGC). **American White Pelican:** 1 Dec - 26 Feb (153 max) Dyer Co (WGC); 10 Jan (14) Shelby Co (CHB, VBR, MGW); 26 Jan - 28 Feb (300 max) Lake Co./(110 max) Samburg (WGC). **Double-crested Cormorant:** 14 Feb (800) Samburg (WGC), max. **American Bittern:** 19 Dec (1) Reelfoot CBC, third Dec record for West Tenn. **Great Egret:** 19 Dec (1) Hwy 79 & Great River Rd., Lake Co (WGC); 20 Dec (5) Memphis CBC. **Cattle Egret:** 12 Feb (1) Tiptonville Sewage Lagoon, Lake Co (WGC), first winter record for West Tenn. **Black-crowned Night-Heron:** 19 Dec (1 ad) Reelfoot CBC. **Ross's Goose:** 7-11 Jan (3) Long Point, Reelfoot NWR, Lake Co ; 22 Feb (1) Hwy 103 & Great River Rd., Dyer Co (WGC). **Mute Swan:** 5-8 Feb (1) Shelby Farms (VBR, Ted Wilson). **Greater Scaup:** 5 Dec (3 f) Lauderdale WMA, Lauderdale Co; 5 Jan (1 f) Whites Lake WMA & (1 f) Reelfoot L., Obion Co; 15-31 Jan (9 max) Everett L.; 26 Jan (1) Great River Rd., Dyer Co ; 9 Feb (2) Samburg (all by WGC). **White-winged Scoter:** 14 Feb (1 f) Tennemo Levee Rd., Dyer Co (WGC). **Red-breasted Merganser:** 26-27 Feb (6 m) Reelfoot L (WGC).

Eagle - Woodcock: **Bald Eagle:** 1 Nov thru period (1) Shelby Forest S.P. (Dan Faqua); 10 Dec - 22 Feb (2 ad, nest) Heloise (WGC), nest abandoned mid-March when barge traffic increased nearby; 10 Dec thru period (2 ad, 3 im) Whites Lake WMA (WGC); 25 Jan (1) Lower Hatchie NWR (TWRA); 17 Feb (1 ad) Ed Davis Fish Farm (MAG), first record for Gibson Co. **Sharp-shinned Hawk:** Memphis (4), Madison CBC (1), Lake Co (1). **Cooper's Hawk:** Shelby Co (9), Fayette Co (1). **"Harlan's" Red-tailed Hawk:** 20 Dec (1) Memphis CBC; 3 Jan (1) Fayette Co CBC. **"Krider's" Red-tailed Hawk:** 21 Dec - 5 Feb (1) Shelby Farms (VBR). **Rough-legged Hawk:** 30 Dec (1) Madison Co (MAG). **Merlin:** 19 Dec (1) Reelfoot CBC. **King Rail:** 17 Jan (1) Black Bayou WMA (WGC, Nancy Moore), first winter record for West Tenn. **Sandhill Crane:** 16 Dec/13 Feb (300+) Hop-In WMA, Obion Co (WGC, MTOS, TWRA). **American Avocet:** 1-4 Dec (1) Whites Lake WMA (WGC), first winter record for West Tenn. **Greater Yellowlegs:** 1 Dec (7) Dyer Co (WGC); 21-22 Dec (1) Shelby Farms (VBR); 17/28 Feb (1) Lake Co (WGC), ers; 28 Feb (22) Dyer Co (WGC). **Lesser Yellowlegs:** 22/27 Feb (8 max) Dyer Co (WGC), ers; 28 Feb (15) Mud L., Lake Co (WGC). **Pectoral Sandpiper:** 27 Feb (1) Shelby Farms (William Peeples), ers. **Dunlin:** 1 Dec/7 Jan (4) Heloise (WGC). **Dowitcher sp.:** 5 Dec (11) Whites Lake WMA (WGC). **American Woodcock:** 27 Jan - 20 Feb (6 max) Navy Park, Shelby Co (Meredith Perry, Gaynell Perry); 18 Feb (1) east Memphis (Susan McWhirter).

Gull - Nighthawk: **Franklin's Gull:** 4 -5 Dec (1, first winter plumage) Island 21, Dyer Co (WGC). **Bonaparte's Gull:** 1 Dec - 27 Feb (200 max) Dyer Co (WGC); 20 Dec - 16 Jan (34) Shelby Co (MTOS, VBR); 19 Dec - 27 Feb (500 max) Lake Co (WGC); 17 Jan - 8 Feb (375+ max) Obion Co (WGC). **Ring-billed Gull:** 3 Jan (5,000) Heloise (WGC), max. **Herring Gull:** 10 Jan (2) McKellar L., Shelby Co (CHB, VBR, MGW); 7-16 Jan (1 ad) Island 21, Dyer Co & (2 im) Everett L (WGC); 20 Jan (2 im) Reelfoot L (WGC). **Barn Owl:** 19 Dec (1 im) Shelby Farms (MGW); 30 Dec (1 im) Haywood Co; 31 Dec (1) Audubon Park, Memphis; 10/12 Jan (2 im) east Memphis; 15 Jan (1 ad) Hatchie R. at Covington, Tipton Co (all Knox Martin). **Short-eared Owl:** 19 Dec (2) Reelfoot CBC; 13 Feb (2) Black Bayou WMA (MAG, SWM, JRW). **Long-eared Owl:** 19 Dec (1) Reelfoot CBC, identified by call. **Common Nighthawk:** 1-20 Dec (4 max) Memphis (Lula Coffey, Martha Heinemann).

Vireo - Oriole: **White-eyed Vireo:** 20 Dec (1) Memphis CBC. **American Crow:** 2 Jan (42, 812 on roost) Jackson CBC. **House Wren:** 20 Dec (3) Memphis CBC; 3 Jan (1) Fayette Co CBC; 10 Jan (1) Shelby Forest S.P. (CHB, VBR, MGW). **Sedge Wren:** 19 Dec (4) Reelfoot CBC; 20 Dec (1) Memphis CBC; 12/17 Jan (1) Black Bayou WMA (WGC). **Marsh Wren:** 19 Dec (4) Reelfoot CBC; 16 Jan (1) Kirby Pocket, Obion Co & (1) Black Bayou WMA (WGC). **Orange-crowned Warbler:** 20 Dec (2) Memphis CBC; 13/19 Jan (1) Shelby Farms (CHB, VBR, Selma Lewis). **Common Yellowthroat:** 19 Dec (1 m) Reelfoot CBC; 24 Dec (1 m) Reelfoot Lake S.P. (DM, RDH); 9 Feb (1 m, window kill) downtown Memphis (Glen Campbell). **American Tree Sparrow:** 19 Dec (3) Reelfoot CBC; 20 Dec (2) Memphis CBC; 3 Jan (2) Fayette Co CBC; 17 Jan (4) Airpark Inn, Reelfoot L (WGC); 13 Feb (5) Black Bayou WMA (MAG, JBG, SWM, JRW). **LeConte's Sparrow:** 19 Dec (2) Reelfoot CBC; 20 Dec (1) Memphis CBC; 13 Feb (2) Black Bayou WMA (MAG, JBG, SWM, JRW). **Western Meadowlark:** 19 Dec (1) Reelfoot CBC, identified by call; 13 Feb (1+) Hwy 78 near Phillipy, Lake Co (MAG, JBG, SWM, JRW). **Baltimore Oriole:** 20 Dec (1) Memphis CBC.

Locations: Black Bayou WMA - in Lake Co; Everett L. - in Dyer Co; Heloise - in Dyer Co; Reelfoot L - in Lake & Obion Cos; Samburg - in Obion Co; Shelby Farms - in Shelby Co; Shelby Forest S.P. - in Shelby Co; Whites Lake WMA - in Dyer Co.

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HIGHLAND RIM AND BASIN REGION — The winter quarter in the Nashville area was rather warm. While December was three degrees warmer than average, January and February were six and five degrees warmer, respectively. December had 1.5 inches more precipitation than usual, but January was an extremely wet month, with rainfall over 5.5 inches above average. In contrast, February ended up having a shortfall of 1.5 inches.

For the second year in a row, some of the major highlights of the winter season were western hummingbirds wintering in the Middle Tennessee area. Foremost was the return of the previously state-first Calliope Hummingbird to the yard where she was banded last winter by Bob and Martha Sargent. Chris Sloan and Portia MacMillan have taken over those duties in the Middle Tennessee area, and they

banded a third state record Black-chinned Hummingbird, along with three Rufous Hummingbirds. A Snow Bunting was found at Old Hickory Lake at a spot dubbed "Snow Bunting Peninsula" by local birders because of a previous sighting in 1969. The two earlier birds stayed for over two months (see *Migrant* 50:47), while this season's single bird was found for just two days. Three Western Grebes, a Tundra Swan and a Harris's Sparrow stayed long enough to be viewed by numerous observers.

Loon - Duck: **Common Loon:** 29 Jan - 28 Feb (1) Putnam Co (SJS, m.ob.), 1st Jan & Feb record in Co. **Horned Grebe:** 20 Jan (290) Center Hill L, DeKalb Co (SJS), max. **Eared Grebe:** 6 Dec (1) Radnor L (RHC). **WESTERN GREBE:** 22 Dec - 4 Feb, (intermittently 3) Old Hickory L (LFK, m.ob). **Double-crested Cormorant:** 4 -28 Feb (1) Putnam Co (SJS). **American Bittern:** 9 Dec (1) Putnam Co (GKE, SJS), 2nd Co record & 1st in winter. **Great Blue Heron:** 13 Feb (50) Old Hickory L (LFK), working on nests at rookery. **Black Vulture:** 16 Jan (200) Long Hunter S.P., Davidson Co (RHC). **Greater White-fronted Goose:** 13 Dec (1) Davidson Co (Sue Marden); 1-16 Dec (1 im) Putnam Co (SJS, Daniel Combs, m.ob.). **Snow Goose:** 5 Dec - 28 Feb (1 im) Putnam Co (SJS, m.ob.). **Ross's Goose:** 1 Dec - 12 Jan (1 im) Putnam Co (SJS, Daniel Combs, m.ob.). **Tundra Swan:** 23 Jan (1) Monsanto Ponds (TAE); 18 Feb into spring (1) Bellevue, Davidson Co (Kathy Shaw, m.ob.), bird died in April when it collided with power lines. **Swan sp.:** 29 Jan (1) Williamson Co (Jan Shaw). **Canvasback:** 9 Dec (27) Franklin Reservoir (EO). **Surf Scoter:** 1-4 Jan (1) Coleman L, Davidson Co (CAS). **White-winged Scoter:** 9 Jan (1) Putnam Co (SJS). **Hooded Merganser:** 9 Dec (100) Franklin Reservoir (EO). **Ruddy Duck:** 9 Dec (29) Franklin Reservoir (EO).

Eagle - Hummingbird: **Bald Eagle:** 16 Dec (2) Radnor L (RHC); 18 Jan (1) Old Hickory L (Dick Newton). **Rough-legged Hawk:** 11 Feb (1) Maury Co (Barbara Finney). **Peregrine Falcon:** 27 Dec (1 im) Percy Priest Dam, Davidson Co (Tommy Harston); 30 Dec (1) Old Hickory L (LFK); 31 Dec (1) downtown Nash (Sabin Thompson); 21 Jan (1) Pennington Bend (MLM). **Virginia Rail:** 19 Jan (1) Monsanto Ponds (Mike O'Malley). **Sandhill Crane:** 13 Jan (1) Maury Co (TAE); 20 Feb (800) White Co (SJS); 20 Feb (2000) Putnam Co (GKE); 26 Feb (23) Jackson Co (JCS). **Spotted Sandpiper:** 1-19 Dec (1) Putnam Co (SJS, GKE, Barbara Stedman, Lynda Perry), 1st Co winter record. **American Woodcock:** 7 Feb (3+) Nolensville, Davidson Co (RHC). **Laughing Gull:** 8 Jan (1) Pennington Bend (MLM). **Franklin's Gull:** 1 Jan (1) Old Hickory L (CAS). **Herring Gull:** 10 Jan (50) Old Hickory L (CAS), max. **Glaucous Gull:** 15 Jan (1) Pennington Bend (MLM). **Common Nighthawk:** 15 Dec (1) Nash (Galen Lenhart); 2 Jan (1) Donelson, Davidson Co (MLM); 25 Feb (1) Maury Co (TAE). **Black-chinned Hummingbird:** 3 Dec (1 banded) Williamson Co (PRM, CAS), present thru month. **Calliope Hummingbird:** throughout period (1) Nash (fide PRM, CAS), recaptured 19 Nov in same yard where banded last winter by Bob and Martha Sargent. **Rufous Hummingbird:** throughout period (1 im m banded 25 Nov) Murfreesboro, Rutherford Co (PRM, CAS); throughout period (1 ad f banded 26 Nov) Nash (PRM, CAS); 4 Dec (1 ad f banded) Lebanon, Wilson Co (PRM, CAS).

Phoebe - Oriole: **Eastern Phoebe:** 10 Feb (1) Coffee Co (Nicky Medley). **Barn Swallow:** 13 Dec (1) Williamson Co (RHC). **Red-breasted Nuthatch:** throughout period

(1) Putnam Co (GKE), at feeder. **Gray Catbird:** 22 Dec - 6 Jan (1) Putnam Co (Richard Simmers), 2nd Co winter record. **Prairie Warbler:** 16 Dec (1, f or im) Putnam Co (SJS, JCS, GKE), 1st winter record in state. **Palm Warbler:** 6 Dec (1) Coffee Co (Erma Rogers); 18-19 Dec (1-3) Putnam Co (SJS, Carol Williams); 20 Feb (1) Putnam Co (SJS); 24 Feb (18) Coffee Co (Erma Rogers). **Harris's Sparrow:** 29 Dec into Feb (1) Lawrence Co (Morris Williams, m.ob.). **Snow Bunting:** 10-11 Jan (1) Old Hickory L, Davidson Co (KDE, m.ob.). **Baltimore Oriole:** 4 Dec (1) Maury Co (Mary Lyles); 7 Dec (1 ad m) Pickett Co (Robbie Hassler), at feeder; 22 Dec (1) Antioch, Davidson Co (Marjorie Graham), at feeder; 19 Dec - 28 Feb (1) Putnam Co (John & Evelyn Stites, GKE, JCS, SJS), at feeder, 1st winter record in Co.

Locations: Franklin Reservoir - in Williamson Co; Monsanto Ponds - in Maury Co; Nash - Nashville; Old Hickory L - in Davidson & Sumner Cos; Pennington Bend - in Davidson Co; Radnor L - in Davidson Co.

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CUMBERLAND PLATEAU/RIDGE AND VALLEY REGION — Temperatures this winter were generally on the mild side, continuing a trend from autumn. Precipitation was above average in December and January, especially in the Chattanooga area, while February rainfall was below normal. Only a couple of light snowfalls occurred in the northern portion of the region.

Red-necked and Eared Grebes were found on lakes just east of Knoxville. Waterfowl numbers seemed average or better, with several infrequent species reported. Peregrine sightings were widespread. Two Rough-legged Hawks returned to the upper Sequatchie Valley near Pikeville. The mild weather induced numerous birds to linger later than normal. Notable in this regard were Great Egret, Osprey, Sora, Dowitcher sp., Marsh Wren, Blue-gray Gnatcatcher, Gray Catbird, and five species of warblers. The wintering population of Sandhill Cranes at the Hiwassee refuge continues to grow. A Rufous Hummingbird banded in Louisiana nearly three years ago was re-captured near Knoxville. Lapland Longspurs were reported in the northeast and a Long-eared Owl in the south. Boreal irruptives were quite scarce.

Loon - Heron: **Common Loon:** 12 Dec (170/26) Douglas L/Cherokee Dam (RLK, KDE); 13 Dec (24) Boone L (JWC); 24 Jan (12) Tellico L, Monroe Co (KTOS). **Horned Grebe:** 26 Dec (70+) Douglas L (KDE); 13 Feb (100+) Cherokee Dam (KDE); max. **Red-necked Grebe:** 18 Dec - 24 Jan (1) Cherokee Dam (KDE, m.ob.). **EARED GREBE:** 26 Dec (3) Douglas L. (KDE); 20 Feb (1) Cherokee Dam (KDE). **Double-crested Cormorant:** 1/20 Jan (15+) Kingsport (RLK); 12 Jan (9) Knox Co (AWJ, Audrey Mayer). **Great Egret:** 12 Dec (1) upper Douglas L (RLK); throughout period (1) Louisville, Blount Co (Dan Mooney). **Black-crowned Night-Heron:** 12 Dec (36) Douglas Dam, Sevier Co (RLK, KDE); 25 Dec - 13 Feb (2-6) Cherokee Dam (KDE); 1 & 20 Jan (12+) Kingsport (RLK); 2 Feb (1) Ktn. Stm. Pl. (NM).

Waterfowl: **Greater White-fronted Goose:** 6 Dec (1) Ktn. Stm. Pl. (KTOS); 18 Dec (1) Jefferson Co (KDE); 1 Jan (2) Hiwassee CBC (DJT); 4 Feb (1) Eagle Bend (Audrey Hoff, NM). **Snow Goose:** 12 Dec (12 blue, 3 white) Greene Co (DHM, ACL), holdovers from fall; 19 Dec (5) Chatt CBC; 12 Jan (2) Looney Island, Knox Co (KDE, DJT,

Nathan Klaus); 8 Feb (1) Hiwassee (KAC, Tanya Jordan); 16 Feb (45 flying over) near Boone L, Sullivan Co (Len Robertson), record high count locally; 28 Feb (1) Birchwood, Hmlt. Co (KAC, Daniel Jacobson). **Ross's Goose:** 2 Jan (1) Hiwassee (RDH, DM, FLB, SAB, LP). **Tundra Swan:** 1 Jan - 21 Feb (1 im) Hiwassee (KAC, m.ob.); 29 Jan - 5 Feb (1 ad) Limestone, Wash. Co (Rachel Ridall, RLK); 13 Feb (1) Greene Co (DHM, ACL). **Gadwall:** 20 Jan (159) Kingsport (RLK), max. **Blue-winged Teal:** 1 Jan (2) Eagle Bend (NM). **Northern Pintail:** 31 Dec (13) Cove Lake SP, Campbell Co (NM); 1 Jan (18) Eagle Bend (NM), max. **Green-winged Teal:** 12 Dec (100+) Douglas L (RLK), max. **Canvasback:** 19 Jan (24) Eagle Bend (NM), max. **Redhead:** 26 Dec (40) Douglas L (KDE); 17 Feb (99) Chickamauga L (KAC), max. **Ring-necked Duck:** 20 Jan (178) Kingsport (RLK), max. **Greater Scaup:** 27 Dec (83) Nickajack L, Marion Co (KAC), max; 7-18 Jan (1-3) Cherokee Dam (KDE); 27 Jan (1) Eagle Bend (NM). **Lesser Scaup:** 20 Jan (102) Kingsport (RLK), max. **White-winged Scoter:** 2-16 Jan (6-1) Cherokee Dam (KDE, m.ob.); 13-15 Jan (1) Knoxville (Sandra Kolak, AWJ, Audrey Mayer). **Black Scoter:** 25 Dec - 10 Jan (2-4 f) Cherokee Dam (KDE, m.ob.). **Common Goldeneye:** 20 Jan (14) Kingsport (RLK); 1 Feb (61) Chickamauga L (KAC), max. **Oldsquaw:** 12 Dec (5) Douglas L (RLK, KDE). **Hooded Merganser:** 26 Dec (100+) Douglas L (KDE), max.

Osprey - Crane: **Osprey:** 12 Dec - 16 Jan (1) Cherokee Dam (KDE, RLK, m.ob.), one present during at least 3 of last 5 winters. **Bald Eagle:** 26 Dec (1 ad) Douglas L (KDE); 1 Jan (1 ad) Douglas L (RDH, DM FLB, SAB, LP); 24 Jan (1 ad) Boone L (RLK). **Northern Harrier:** 16 Jan (15) Mohawk, Greene Co (DHM, ACL et al.), max. **Rough-legged Hawk:** 3 Jan - 1 Feb (1 light-morph) n of Pikeville (RDH, DM, FLB, Roi & Debbi Shannon, KAC et al.); 5 Feb - 9 Mar (1 dark-morph) n of Pikeville (John Henderson, RLK, DJT et al.). **Golden Eagle:** 13 Feb (1) Greene Co (DHM, ACL). **Peregrine Falcon:** all winter (pair) Chickamauga Dam nest site, Hmlt. Co (Harold Sharp et al.); 22 Dec (1) Poland Creek Recreation Area, Blount Co (Audrey Hoff); 30 Jan/27 Feb (1) Greene Co (DHM, ACL); 6 Feb (1) Watts Bar Dam, Rhea/Meigs Cos (FLB, SAB, LP); 21 Feb (1) Wash. Co (RLK); throughout period (1)/27 Feb (3) Knoxville (Dick Dickenson). **Sora:** 6 Dec/2 & 13 Feb (1-2) Ktn. Stm. Pl. (KTOS). **Sandhill Crane:** 1 Jan (6309) Hiwassee CBC, max; 11 Dec (3) Jefferson Co (Miles Wright); 1 Jan (1) Grainger Co (RDH, DM, FLB, SAB, LP); 4 Jan (40) Anderson Co (RDH, DM); 7 Feb (17) Ktn. Stm Pl. (Liz Singley).

Sandpiper - Hummingbird: **Least Sandpiper:** 1 Jan (2) Hiwassee CBC; 11 Jan (1) Eagle Bend (RDH, DM). Dunlin: 5 Dec (1) Greene Co (DHM, ACL); 26 Dec (5) upper Douglas L (KDE); 1 Jan (20) Hiwassee CBC. **Dowitcher sp.:** 1 Jan (10) Hiwassee CBC. **American Woodcock:** 8-27 Feb (1-3) Greene Co (DHM, ACL); 10 Feb (10) Forks of the River WMA, Knox Co (KDE et al.); 25 Feb (4) Sequatchie Co (KAC et al.); 26 Feb (2) Cove Lake SP, Campbell Co (Jimi Moore). **Bonaparte's Gull:** 12 Dec (750+) Douglas L (RLK, KDE), max. **Eurasian Collared-Dove:** 19 Dec (1) Chatt CBC; 1/7 Feb (7/9) Pikeville (KAC/RLK). **Barn Owl:** 21 Jan (1) Gray, Wash. Co (RLK); 25 Feb (1) Sequatchie Co (KAC et al.). **Long-eared Owl:** 24 Feb - 6 Mar (1) Sequatchie Co (Bonnie Johnson, Hayden Wilson, John Henderson, Libby Wolfe, Daniel Herron,

KAC). **Rufous Hummingbird:** 3 Dec (1 f) Farragut, Knox Co (Jean Stierberger), present over 1 month/remained through mid Jan, captured this date by Bob & Martha Sargent, had been banded 4 Jan 1996 in Lafayette, Louisiana, by Dave Patton; 7 Jan (1 m) Graysville, Rhea Co (banded by PRM & CAS), remained throughout Feb. **Hummingbird sp.:** early Dec - early Jan (1) Dandridge, Jefferson Co (fide J.B. Owen).

Shrike - Pipit: **Loggerhead Shrike:** reported at 5 sites in Greene Co (DHM, ACL), but only twice in Wash. Co (RLK). **Common Raven:** 30 Dec (2) Fort Patrick Henry L, on Kingsport CBC (RLK). **Purple Martin:** 23 Feb (1) McMinn Co (fide J.B. Owen), ers. **Horned Lark:** 23 Feb (100+) Limestone, Wash. Co (RLK), max. **Red-breasted Nuthatch:** 4 Dec (1) Big South Fork, Scott Co (Stephen Stedman); 3 Jan (1) Knoxville CBC; 23 Jan (1) Hmlt. Co (Janet Phillips); only reports. **House Wren:** 4 Dec (1) Big South Fork, Scott Co (SJS); 6 Dec/26 Feb (2/1) Conklin, Wash. Co (RLK); 10 Jan (1) Greene Co (DHM, ACL). **Marsh Wren:** 19 Dec (2) Amnicola Marsh, Chatt CBC; 30 Jan (1) Ktn. Stm. Pl. (Michael Hodge). **Blue-gray Gnatcatcher:** 14 Dec (1) Brainerd Levee, Hmlt. Co (KAC). **Gray Catbird:** 2 Jan (1) Nickajack CBC, Marion Co. **American Pipit:** 12 Jan (150) U.T. Plant Science Farm, Knox Co (AWJ); 12 Jan (110) Wash. Co (RLK); 30 Jan (100+) Greene Co (DHM, ACL).

Warbler - Siskin: **Orange-crowned Warbler:** 4 Jan (1) Knox Co (Chris Welsh, Boyd Sharp); 18 Feb (1) Hmlt. Co (Libby Wolfe). **Pine Warbler:** 25 Dec/3 Jan (1) Kinser Park, Greene Co (DHM, ACL); 30 Dec (1) Boone Dam, Kingsport CBC (RLK); 6-10 Jan/15 Feb (1) Oak Ridge, Anderson Co (Dev Joslin); 28 Jan (1) Bluff City, Sullivan Co (Bert & Loraine Hale); 16 Feb (1) Norris Dam SP, Campbell Co (NM). **Prairie Warbler:** 16 Jan (1) Cherokee Dam (KDE, Dan Mooney), 2nd winter record in state, both this season (see preceeding region). **Palm Warbler:** 6 Dec (2) Ktn. Stm. Pl. (KTOS); 13 Dec - 26 Feb (1-6) 4 sites in Greene Co (DHM, ACL); 15 Dec - 16 Feb (1-3) Eagle Bend (NM et al.); 19 Dec (3) Chatt CBC; 1 Jan (4) Hiwassee CBC; 17 Jan - 13 Feb (up to 19, including 1 Yellow Palm) Cherokee Dam (KDE et al.); 13 Feb (1) Jefferson Co (KDE); 16 Feb (1) Austin Springs, Wash. Co (RLK). **Common Yellowthroat:** 3 Feb (1 m) Warrior's Path SP, Sullivan Co (MJE). **Vesper Sparrow:** 28 Jan (1) Ktn. Stm. Pl. (NM). **LeConte's Sparrow:** 10-11 Jan (1) U.T. Plant Science Farm, Knox Co (FLB, RDH, DM). **Lapland Longspur:** 23 Feb (3+) Limestone, Wash. Co (RLK), in flock of Horned Larks, only 4th ne Tenn record. **Longspur sp.:** 28 Jan - 2 Feb (1) Ktn. Stm. Pl. (NM, Nathan Klaus). **Purple Finch:** few reports, mostly singles. **Pine Siskin:** 27 Dec (1) Greene Co (DHM, ACL); 29 Jan (1) Caryville, Campbell Co (NM); only reports.

Locations: Boone L - in Sullivan & Washington Cos; Chatt - Chattanooga; Cherokee Dam - in Grainger & Jefferson Cos; Chickamauga L - in Hamilton Co; Douglas L - in Jefferson & Sevier Cos; Eagle Bend - Eagle Bend Fish Hatchery, Anderson Co; Hiwassee - primarily in Meigs Co; Hmlt. Co - Hamilton Co; Kingsport - in Sullivan Co; Ktn. Stm. Pl. - Kingston Steam Plant, Roane Co; Pikeville - in Bledsoe Co; Wash. Co - Washington Co.

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EASTERN MOUNTAIN REGION — It was a fairly mild winter with no extreme cold periods or heavy snowfalls. Eared Grebes over-wintered again on South Holston Lake, but numbers were much lower than the previous four years. Waterfowl numbers seemed good. The wintering Bufflehead population continues to grow. It was not an invasion year for the northern finches; even goldfinch numbers were well below normal.

Loon - Merganser: **Red-throated Loon:** 2 Jan (1) S. Hol. L. (BKS). **Common Loon:** 13 Dec (24) S. Hol. L (JWC), max. **Horned Grebe:** 11 Jan (33) Watauga L (RLK), max; 15 Jan (8) S. Hol. L (RLK). **Eared Grebe:** 13 Dec/15 Jan (1) S. Hol. L (JWC/RLK), 5th consecutive year of occurrence here. **Double-crested Cormorant:** 16 Jan (1) S. Hol. L (MJE, Judy Roach). **Black-crowned Night-Heron:** 27 Dec (1 ad) Bristol CBC, Sullivan Co (RLK, Geoff Larsen); 16 Jan (1) S. Hol. L (MJE, Judy Roach). **Tundra Swan:** 9-18 Jan (1 im) Watauga R, Carter Co (Brian Cross et al.); 10-30 Jan (1 im) S. Hol. R at weir (RLK et al.). **Wood Duck:** throughout Jan & Feb (10) Erwin (BKS et al.). **Gadwall:** 9 Jan (16) Erwin (BKS). **Green-winged Teal:** 25 Jan (6) Orchard Bog, Shady Valley (JLS), 1st record there; throughout Jan & Feb (4) Erwin (BKS). **Canvasback:** 10 Jan (1) S. Hol. R at weir (BKS, Howard Langridge). **Redhead:** 1 Jan (2) Erwin (BKS); 2 Jan - 22 Feb (2-11) Wilbur L. (RLK, BKS et al.); 28 Jan (12) Sharps Hollow, Sullivan Co (Bert Hale). **Greater Scaup:** 14 Jan - 22 Feb (4 -7) Wilbur L (RLK, BKS et al.). **Black Scoter:** 20 Dec (1 f) S. Hol. R at weir (JWC, JLS et al); 28 Jan (1 m) S. Hol. R at weir (Bert & Loraine Hale). **Bufflehead:** 19 Dec (177) Elizabethton CBC, record high for count; 27 Dec (299) Bristol CBC, record high for count; 14 Jan (211) Wilbur L (RLK), max there. **Red-breasted Merganser:** 13 Dec (7) S. Hol. L (JWC); 2 Jan (9) S. Hol. L (BKS).

Crane - Woodpecker: **Sandhill Crane:** 11 Jan through Feb (1 im) Shady Valley (JLS), 1st record there. **American Woodcock:** 9 Feb (1) Watauga R, Carter Co (Gary Wallace). **Ring-billed Gull:** 15 Jan (400) S. Hol. L (RLK), max. **Barn Owl:** 27 Dec/25 Feb (1) Holston Valley, Sullivan Co (Richard Lewis). **Red-headed Woodpecker:** 27 Dec (2) GSMNP CBC.

Raven - Siskin: **Common Raven:** 14 Feb (pair, 1 carrying nesting material) Doe R. Gorge, Carter Co (Allan Trently, RLK); late Feb (pair at nest) Devil's Looking Glass, Unicoi Co (Allan Trently). **Black-capped Chickadee:** 27 Dec (79) GSMNP CBC, high count. **Winter Wren:** record high numbers on CBCs at Elizabethton, Bristol, & Roan Mtn.: 19 Dec (18) Elizabethton CBC; 27 Dec (23) Bristol CBC; 20 Dec (9) Roan Mtn CBC. **American Pipit:** 27 Dec (100) Bristol CBC. **Orange-crowned Warbler:** 27 Feb (1) Cades Cove, GSMNP (DJT). **Pine Warbler:** 25 Feb (1) Erwin (FJA); 27 Feb (2) Cades Cove, GSMNP (DJT). **American Redstart:** 15 Dec (2) Laurel Falls, GSMNP (Bill & Alison McNutt), 2nd winter record in Tenn. **Chipping Sparrow:** 19 Jan (1) Milligan College, Carter Co (FJA). **Fox Sparrow:** 20 Dec (26) Roan Mtn CBC, at village (FJA, Rob Biller), record high for count. **Snow Bunting:** 3 Dec (2) Hump Mtn, Avery Co, NC (Ed Schell), near state line. **Purple Finch:** few reports. **Red Crossbill:** 27 Dec (159) GSMNP CBC, high number. **Pine Siskin:** 27 Dec (35) GSMNP CBC; very few other records. **Evening Grosbeak:** 19 Dec (2) Elizabethton CBC (Howard Langridge), only report.

Locations: Erwin - in Unicoi Co; GSMNP - Great Smoky Mountains National Park; Roan Mtn - in Carter Co; Shady Valley - in Johnson Co; S. Hol. L - South Holston Lake, Sullivan Co; S. Hol. R - South Holston River, Sullivan Co; Watauga L - in Carter Co; Wilbur L - in Carter Co.

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FJA	- Fred J. Alsop	PRM	- Portia R. MacMillan
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NOTE: NEW REGIONAL EDITOR

Records for the Highland Rim and Basin (HR&B) Region Season Report should now be sent to the new Regional Editor for the HR&B Region:

Phillip Casteel
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This region includes the following counties: Macon, Trousdale, Wilson, Rutherford, Bedford, Marshall, Lincoln, Clay, Jackson, Smith, Dekalb, Cannon, Coffee, Moore, Pickett, Overton, Putnam, White, Warren, and Franklin.

Many thanks are due to Francis (Frank) Fekel for is conscientious work as HR&B Regional Editor for the past three years.

ARTICLES SCHEDULED FOR THE NEXT ISSUE OF *THE MIGRANT*

NIGHTJAR MONITORING
AT ARNOLD AIR FORCE BASE, TENNESSEE
by Donald L. Davidson and John W. Lamb

LATE GRASSHOPPER SPARROW NEST
AT KINGSTON STEAM PLANT
by Ronald D. Hoff

THE NESTING OF THE COMMON RAVEN IN TENNESSEE
by Allan J. Trently

REPORT OF THE TENNESSEE BIRD RECORDS COMMITTEE
by Kevin A. Calhoon

MINUTES OF THE 1999 FALL TOS MEETING
by O. Knox Martin

THE SEASON: SPRING: 1 MARCH - 31 MAY, 1999
By Richard L. Knight

INSTRUCTIONS TO AUTHORS

The Migrant records observations and studies of birds in Tennessee and adjacent areas.

SUBMISSIONS: The original and two copies of the manuscript should be sent to the Editor: J.D. Joslin, 112 Newcrest Lane, Oak Ridge, TN 37830. Manuscripts that have been published in other journals should not be submitted. Electronic copies on disk or sent by e-mail to <jdjoslin@esper.com> are greatly appreciated.

MATERIAL: The subject matter should relate to some phase of Tennessee ornithology. It should be original, factual, concise, and scientifically accurate.

STYLE: Both articles and short notes are solicited; recent issues of *The Migrant* should be used as a guide in the preparation of manuscripts. Where more detail is needed, reference should be made to the *CBE Style Manual;* this book is available at many public libraries and from the Council of Biology Editors, Inc., 111 East Wacker Drive, Suite 3200, Chicago, IL 60601-4298.

COPY: Manuscripts should be typed *double-spaced* on 8.5 x 11" paper with adequate margins for editorial notations. Tables and figures should be prepared on separate sheets with appropriate headings; see *CBE Style Manual* for examples of appropriate form for tables. Photographs intended for reproduction should be sharp with good contrast on glossy white paper; black-and-white photographs will usually reproduce better than color photographs. Weights, measurements, and distances should be in metric units. Dates should be in "continental" form (e.g., 16 March 1997). Use the 24-hour clock (e.g., 0500 or 1900).

NOMENCLATURE: The scientific name of a species should be given after the first use of the full common name in the text. The scientific name should be underlined and in parentheses. Names should follow the *A.O.U. Check-list of North American Birds* (seventh edition, 1998, or supplements).

TITLE: The title should be concise, specific, and descriptive.

ABSTRACT: Manuscripts of five or more typed pages should include an abstract. The abstract should be less then 5% of the length of the manuscript. It should include a brief explanation of why the research was done, the major results, and why the results are important.

LITERATURE CITED: List all literature citations in a "Literature Cited" section at the end of the text. Text citations should include the author and year.

IDENTIFICATION: Manuscripts including reports of rare or unusual species or of species at atypical times should include: date and time, light and weather conditions, exact location, habitat, optical equipment, distance, behavior of bird, comparison with other similar species, characteristic markings, experience of observer, other observers verifying the identification, and reference works consulted.

REPRINTS: Reprints are available to authors on request. Billing to authors will be through the TOS Treasurer. Request for reprints must be made well in advance of printing.

SEASON REPORTS: Observations that are to be considered for publication in "The Season" section should be mailed to the appropriate Regional Compiler. Consult a recent issue of *The Migrant* for the name and address of the compiler.

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